

REVIEW OF THE NEARCTIC TETANOCERIDÆ.*

A. L. MELANDER, Pullman, Washington.

The flies of this family are commonly encountered in meadows and along marshy shores, some species being quite abundant. Their delightful colors, with prevailingly reddish body and frequently pictured wings, make them preferred insects with collectors. As their nomenclature has passed through such revolutionary changes since the publication of Aldrich's Catalog, fifteen years ago, the writer prepared a synopsis of the group to help with their identification. As a curious coincidence, about six months after the manuscript was sent away for publication, an unexpected revision of the same group by E. T. Cresson, Jr., appeared in the Transactions of the American Entomological Society. The publication of several of the new genera and species diagnosed in my manuscript made it necessary to recall the copy from the editor and to revise it. To make the tables complete, Cresson's new genera and species and additional localities cited by him have been incorporated. I am also indebted to Cresson for the information concerning the prior use of *Euthycera* Latreille over *Lunigera* Hendel. Aside from these changes, the nomenclature previously decided upon I have retained. A comparison of the two papers will disclose a few instances where we do not agree. Most of these concern the identification of European species. It is interesting to note that independently, without knowing of the other's work, we both arrived at the same conclusions so many times. For example, Mr. Cresson's new genera, *Hoplodictya* and *Dictyomyia*, based on previously known species, were likewise described as new by me.

Mr. Cresson's studies were based mainly on Eastern material, while the present paper, dealing entirely with my own collection, is based principally on Western forms. The combination of the two, therefore, brings to light so much new material and so many changes in nomenclature that the list in Aldrich's Catalog now seems antiquated. Aldrich listed fifty species and seven genera from north of Mexico as coming in this family. Of these,

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six species have been dropped as unrecognizable, eight have been relegated to synonymy and twenty-four have been assigned different generic names, leaving but twelve remaining unchanged. In the following pages are given synoptic keys to twenty-two genera, eighty-nine species and eight varieties. Cresson's paper enumerates fifty-five species and seven varieties, distributed among twenty genera.

The family designation, Tetanoceridæ, has been chosen instead of the name Sciomyzidæ, because *Tetanocera* Dumeril, 1798, antedates *Sciomyza* Fallen, 1820. Even the genera *Dictya* Meigen, 1803, and *Sepedon* Latreille, 1804, have claim for recognition prior to *Sciomyza*. The forms grouped about *Dryomyza* are sometimes segregated as a distinct family, the Dryomyzidæ, but while they have a somewhat characteristic habitus, their differences are hard to express in terms of family value.

In the following pages are given in dichotomic form identification tables for the genera and species of Tetanoceridæ known from north of Mexico. Only in cases where genera or species are not listed in Aldrich's Catalog a bibliography has been included; where species have been assigned to genera other than in the Catalog the former name is given in parenthesis; page references to Cresson's paper are quoted following his name. Localities represented in my collection are designated by an asterisk (*).

The valves of the hypopygium, called paramera by Hendel, sometimes afford splendid characters for identification. The genitalia must be disengaged in order to obtain a view of these appendages, which in old specimens can be readily accomplished by relaxing and pulling down the hypopygium. Examination of the valves, especially in species of *Tetanocera*, where they are large, affords a ready means of certain identification. It may be that such an examination of the American specimens referred to *T. elata*, *ferruginea* and *silvatica* will disclose that these European species do not occur in this country.

With reference to the identification of other European species, the extended distribution of some, such as *Neuroctena anilis*, *Melina nana* and *grisescens*, has long been known. Flies that have so distinctive and frequent a habitat as the marshy shores of ponds often have a wide distribution. The prevalence of European species on the Pacific slope is not

surprising. Notwithstanding opinions to the contrary, I feel it a safer course to use existing European names for such species rather than to describe as new forms that are specifically indistinguishable.

Table of the Genera of Tetanoceridæ.

	Clypeus prominent, not retractable with the infolding of the proboscis, usually chitinized and narrow; first vein ending beyond middle of wing; femora finely pilose, with bristles undeveloped. (<i>Dryomyzinae</i>).....	3
	Clypeus vestigial, rarely chitinized, not touching oral margin when proboscis is extended; first vein ending at middle of wing; femora setulose, their bristles developed; species occurring in moist meadows and along the shores of ponds.....	2
2.	A distinct bristle present above base of front coxæ (indistinct in <i>Melina pubera</i>); front without differentiated median polished stripe, except in <i>Ditania</i> . (<i>Sciomyzinae</i>).....	6
	Propleural bristle wanting; front with a distinct polished median stripe, rarely subshining. (<i>Tetanocerinae</i>).....	9
3.	Wings with costal spines; eyes small, the cheeks broader than the eyes; face not excavated in profile; antennæ not reaching halfway to the mouth-opening; scutellum flat and setulose; pollinose maritime species. <i>Helcomyza</i> Curtis	
	Costa not spinose; eyes deeper than the cheeks; face shorter, and excavated in profile, the antennæ nearly attaining oral margin; scutellum convex and bare.....	4
4.	Dorsocentrals extending in front of the imperfect suture; 6 scutellars; 2 fronto-orbitals; underside of proboscis with saucer-like base; opaque black glaucous pubescent maritime species..... <i>Heteromyza</i> Fallen	
	Transverse suture distinct; 2 dorsocentrals present; 4 scutellars; 1 fronto-orbital; proboscis narrow; middle tibiæ with posterior bristles; subshining reddish woodland species.....	5
5.	Veins bare, hairs of first vein microscopic..... <i>Dryomyza</i> Fallen	
	First vein closely and obviously hairy..... <i>Neuroctena</i> Rondani	
6.	Front tibiæ with 2 approximate preapical bristles; hind femora of both sexes beneath typically with an outstanding bristle.....	7
	Front tibiæ with 1 preapical bristle; at most the hind femora of male short-spinose or hairy.....	8
7.	Arista densely short white plumose; face tuberculate above. <i>Oidematops</i> Cresson	
	Arista black and long-plumose; face not tuberculate..... <i>Sciomyza</i> Fallen	
8.	Small, shining black species with polished front and narrow cheeks; legs yellow, the front pair largely black and with lengthened coxæ. <i>Pteromicra</i> Lioy	
	Yellow to gray, opaque or subshining, never shining black species, with broader cheeks and shorter front coxæ..... <i>Melina</i> Desvoidy	
9.	Scutellum with 4 bristles, (2 in <i>Hemitelopteryx johnsoni</i>); chaetotaxy better developed than in <i>Sepedon</i> ; hind femora not much longer than the abdomen; second antennal joint shorter or at least not longer than third, longer only in <i>Dictyomyia</i>	10
	Scutellum with 2 bristles, no ocellar, humeral, presutural, prescutellar, pleural or abdominal bristles; hind femora greatly surpassing the abdomen; second antennal joint longer than third; lunule free. <i>Sepedon</i> Latreille	
10.	Third antennal joint oval, three times the length of the second; front more or less constricted toward antennæ.....	11
	Third antennal joint rarely oval, usually more or less triangular, flattened or excised above, the second joint relatively much longer; sides of front nearly parallel.....	13

11. Slender species with short and narrow wings; two scutellars, one dorso-central; arista densely short black-plumose. *Hemitelepteryx* Cresson
Wings larger, surpassing the abdomen; four scutellars. 12
12. One preapical bristle on hind tibiae; hypopygium moderate, fifth sternite simple; hind femora closely spinose beneath; first vein ending beyond anterior crossvein; cheeks at least half as wide as eye. *Renocera* Hendel
Two preapical bristles on hind tibiae; hypopygium enlarged, fifth sternite pointed; first vein ending opposite or before anterior crossvein; cheeks not exceeding one-third the eye. *Antichata* Haliday
13. At least meso- and pteropleuræ with macrochaetae; face nearly vertical, its central part with nearly parallel sides; wings brown, with paler spots; eyes vertically oval. 14
No distinct macrochaetae on pleuræ, sometimes setulae present; face more or less receding and divergent below; 2 reclinate fronto-orbitals. 15
14. Two fronto-orbitals, the anterior proclinate, 1 sternopleural, 3 dorso-centrals; second antennal joint with a forcipate pair of stout bristles; fourth tergite of ♂ narrow. *Hoplodictya* Cresson
One fronto-orbital, 0 sternopleural, 2 dorsocentrals; second antennal joint with only ordinary setae; fifth tergite narrow. *Dictya* Meigen
15. Arista almost bare; hind crossvein strongly bent, S-like; scattered setulae on meso-, sterno- and pteropleuræ; wings with few markings; lunule visible. 16
Arista pubescent or plumose; hind crossvein sinuous or arcuate; 2 or 3 dorsocentrals. 17
16. No vallar bristles, i. e., on callosity beneath calypteres, 0 presutural, 0 prescutellar, 1 dorsocentral; extensor femoral bristles weak. *Hedronera* Hendel
Vallar bristles present, 1 presutural, 1 prescutellar, 2 dorsocentrals; front femora bristly above. *Elgiva* Meigen
17. First vein ending almost opposite anterior crossvein; interfrontal stripe depressed and relatively narrow; 2 dorsocentrals; edges of second antennal joint nearly parallel. 18
First vein ending far before anterior crossvein; interfrontalia convex, five times as broad as periorbit; 3 dorsocentrals; second antennal joint compressed, obconical, half as long as the scimiter-shaped third joint, arista plumose; all pleural sclerites setulose; wings brown, with rounded clear spots. *Poecilographa* Melander
18. Meso- and pteropleuræ entirely bare, no vallar bristles, only the sterno-pleuræ setulose. 19
Meso- and pteropleuræ as well as sternopleuræ bearing setulae, vallar bristles (i. e., on callosity beneath calypteres) present; eyes transversely oval; fifth tergite of male wide; lunule covered; wings reticulate. 21
19. Lunule exposed; wings brown, with rounded clear spots. 20
Lunule more or less covered; wings nearly uniformly colored, the crossveins clouded, sometimes with short transverse marks, but no round clear spots; eyes round; arista black-plumose; fifth tergite wide. *Tetanocera* Dumeril
20. Second antennal joint slender, as in *Sepedon*, much longer than the third; eyes vertically oval; arista white-pubescent; wings abnormally wide; fifth tergite ♂ wide; face tuberculate beneath antennæ. *Dictyomyia* Cresson
Second antennal joint quadrate and broad, scarcely longer than third; eyes round; arista white-plumose; fifth tergite ♂ retractile; face carinate just beneath antennæ. *Euthycera* Latreille
21. Arista loosely black-plumose; interfrontal depression not polished. *Trypoptera* Hendel
Arista closely white-pubescent or short-plumose; interfrontal stripe shining. *Limnia* Desvoidy

Heteromyza Fallen.

Heteromyza Fallen, Dipt. Succ. *Heteromyz*, 2 (1820). Not *Heteromyza* of authors (Helomyzidæ) which is *Heteromyiella* Hendel, 1910.

Heterostoma Rondani, Prodr. Dipt. Ital. I, 104 (1856).

Heterocheila Rondani, Prodr. Dipt. Ital. II, 13 (1857).

Oedoparea Loew, Zts. Entom. Breslau, XIII, 10 (1859).

Exocheila Rondani, Prodr. Dipt. Ital. VII, Sciomyz, 72 (1866).

Black, only the halteres yellow; front, mesonotum and scutellum brown pruinose, occiput, pleuræ, abdomen and legs blue-gray; veins and margins of calypteres black; 5 dorsocentrals; body and legs of male with long black hairs; 6-7 mm. Alaska, Washington.* (*Oedoparea*)... *glauca* Coquillett

Helcomyza Curtis.

Helcomyza Curtis, Brit. Ent. 68 (1825).

Actora Meigen, Syst. Besch. V, 403 (1826).

Helcomyza mirabilis n. sp.

Female—Length 7-11 mm. Face, cheeks and lower occiput thickly overlaid with silvery white pollen, front convex and golden-olivaceous pollinose, two rather small fronto-orbital bristles, antennæ black, third joint orbicular, arista short, bare and black, mouthparts black, head with fine hairs which are short and proclinate on the front and outstanding on the cheeks. Thorax thickly coated with pollen, olivaceous gray on anterior mesonotum, usually purer gray about the scutellum, vaguely marked with seal-brown vittæ comprising a central pair stronger at each end and a broader, shorter and darker lateral pair interrupted along the transverse suture, most of the setulæ arising from a brown dot, pleuræ cinereous, a velvet-black spot around the anterior spiracle; chaetotaxy as follows: 1 humeral, 2 notopleural, 1 presutural, 1 supra-alar, 2 intra-alar, 3 dorsocentral, 2 prescutellar, 4 scutellar, 0 pleural except 1 pro-pleural and a superior row of 5 sternopleural bristles, mesonotum and scutellum setulose, pleuræ bare except for rather dense and long outstanding fine black hairs covering the sternopleuræ. Abdomen cinereous, with fine black hair, seven segments visible. Legs hairy, the femora piceous and cinereous pollinose, tibiæ brown, tarsi brown at base, apically black, front femora with six flexor hairs longer than the rest, middle tibiæ with about ten rather strong bristles irregularly placed in addition to the usual preapical crown of bristles; front and hind tibiæ with single preapical bristle. Halteres and calypteres yellow. Wings hyaline, veins fine and black, base of costal cell and all crossveins margined with strong infumation, a brown spot crossing the middle of the first basal cell, costal sections beyond humeral vein proportioned 4 : 4 : 4 : 3 : 2, third and fourth veins drawn together at anterior crossvein, which is located at five-ninths the length of the discal cell, anal vein straight, ending under middle of discal cell.

Male—10-13 mm. Hairs of palpi, cheeks, body and legs much longer, those of sternopleuræ, abdomen and femora tipped with golden; 1 dorsocentral, prescutellars reduced, propleuræ of largest specimens

with a pencil of hairs, no distinct sternopleurals, no preapicals, bristles of middle tibiae more numerous, inside of front and hind tibiae and plantar surface of their tarsi with dense dark-orange sole.



Helcomyza mirabilis n. sp. Male.
(Enlarged 3 diameters.)

The first specimens of this remarkable species were discovered in May, 1917, actively flying over the dry sands along the seabeach near Ilwaco, Washington. Additional specimens were taken on later visits to the same locality in July and August of the same year, and in 1918, with the help of Anthony Spuler and Miss Orilla E. Miner, enough specimens from the same locality were captured to bring the collection up to eighty individuals. The flies were difficult to catch, being alert and quick to take to the wing, and with the sea breeze blowing, were carried many feet along the sands before they would alight. The males vary greatly in stature and vestiture, the largest specimens being quite shaggy. This fine species is one of the largest of the American Acalyptera.

Actora ferruginea Walker, from Nova Scotia, is omitted from the present discussion, as it clearly does not belong to the Tetanoceridæ.

Dryomyza Fallen.

Dryomyza convergens Walker, from Nova Scotia, is omitted from the following table, since it almost certainly belongs elsewhere. It has the thorax trivittate, the posterior crossvein clouded, the arista downy, and the abdomen furnished with short black bristles.

- Wings with marginal cell, apex and crossveins distinctly marked with dark brown; first posterior cell two-thirds as wide as the submarginal along the costa; no distinct posterior setæ on middle tibiæ. Idaho,* Alaska*..... *maculipennis*, n. sp. 2
2. Wings not pictured; middle tibiæ with distinct posterior setæ..... 2
- Third vein recurved, ending beyond wing-tip, the submarginal cell twice as wide as the first posterior along the costa; pilosity of arista very fine and rather sparse. N. Y.,* B. C. (Cresson, 34)..... *dayi* Cresson
- Third vein less recurved, the first posterior cell two-thirds as wide as the submarginal along the costa; arista blackish and distinctly pilose; hypopygium large. Vt.*..... *ferruginea*, n. sp.

Dryomyza maculipennis new species.

Length 5-7 mm. Entirely shining luteous, the tarsi black, front opaque orange, pubescence fine, of front and notum blackish, of sternopleuræ and abdomen long and yellow, of tarsi blackish. Arista loosely hairy, black except at base. Three hair-like black sternopleurals. Middle tibiæ with at most one posterior seta. Veins yellow, but black around the infuscations which include the costal cell, the apex of the wing and the anterior, posterior and anal crossveins, anal crossvein reflexed, third vein gently curving back, ending just behind the wing-tip, parallel with the fourth vein, costal sections beyond the humeral crossvein proportioned 3 : 4 : 5 : 3 : 2.

Nineteen specimens; Avon, Moscow, Waha, Idaho,* Douglas, Alaska* (Jenne).

Dryomyza ferruginea new species.

Male—Length, 5 mm. Ferruginous, shining, middle of abdomen brown, front opaque reddish yellow, pubescence fine, abundant, colored as in the other species. Two fronto-orbitals; antennæ reddish. Two long black sternopleural hairs. Hypopygium large, the paramera hook-like, the penis thick, black, and when exerted curved around the right side of the hypopygium. Middle tibiæ with two or three small posterior setæ, less distinct in the female. Halteres testaceous. Wings with a yellowish tinge, veins yellowish brown, a slight indication of clouding at the apex and about the anterior and posterior crossveins, third vein gently curved, parallel with the fourth and ending at the wing-tip, costal sections proportioned 5 : 5 : 6 : 4 : 3, anterior crossvein nearly transverse.

Two specimens. Lyndon, Vermont,* August 22, 1900.

Neuroctena Rondani.

- First vein entirely hairy; yellow species..... 2
- First vein bare toward base; wings uniformly infumated; arista uniformly pubescent; reddish species with blackened abdomen. Col., N. Mex., Mont.,* Id.,* Wash.,* B. C..... *fumida* Coquillett
2. Crossveins and apices of third and fourth veins clouded; arista nearly bare; a small black spot beneath calypteres. Eur.,* Mass.,* N. H., Ct., Vt.,* N. Y.,* N. J., Queb.,* Ont.,* Mich., Wis., S. D. (Aldrich), Wash.,* Or. (Cole), B. C.,* Alaska.* (*Dryomyza pallida* Day).
anilis Fallen
- Veins not clouded except faintly about posterior crossvein; arista closely plumose; pteropleural spot weak. Mid. States; Pa. (Hough); N. Y., N. J., Ont.* (*Dryomyza*)..... *simplex* Loew

Sciomyza Fallen.

Sciomyza Fallen, not of authors, which becomes *Melina* Desv.

Bischofia Hendel, Abhandl. z. b. Ges. Wien, II, 52, (1902).

Largely shining black, the head, pleuræ, scutellum and abdomen laterally reddish to yellow; legs black, the middle pair yellow, except femora apically, the hind femora yellow toward base; arista sparsely plumose; veins bordered with brown, anterior crossvein beyond end of first vein; mesopleuræ bare. Queb., Ottawa. (*Bischofia varia* Coq., Can. Ent. XXXVI, 12, 1904).....**varia** Coquillett

Largely reddish species with reddish legs, the front pair with black tibiae and tarsi, blackened femoral spot toward apex and paler knees; wings hyaline or apically infumated, anterior crossvein opposite end of first vein; mesopleuræ with posterior row of setulæ..... 2

2. Center of face polished and blackish; palpi apically blackish; plumosity of arista dense; 1 or 2 pteropleural bristles. Ottawa, Que., Me.,* N. H., N. Y., Mich. (*Dryomyza*).....**aristalis** Coquillett

Face white pruinose and yellow; a pruinose stripe above notopleural suture, center of notum olivaceous, lower pleuræ pruinose; palpi yellow; plumosity of arista loose; usually 3 pteropleurals. Eur.; Mont.,* Wash.,* (*Sciomyza simplex* Fall., Dipt. Suec. Sciomyz. 12, (1820); Meigen, Syst. Bes. VI, 10 (1830); Macquart, Suit. Buff. II, 405, (1835); Zetterstedt, Dipt. Sc. V. 2090, (1846); Schiner, Faun. Austr. II, 46 (1864); Rondani, Prodr. Dipt. Ital. VII. Sciomyz. 39 (1868); Hendel, Abh. z. b. Ges. Wien, II, 53 (1902)).....**simplex** Fallen

Pteromicra Lioy.

Pteromicra Lioy, Atti. Instit. Veneto, IX, 1011 (1864).

Dichrochira Hendel, Abhandl. z. b. Ges. Wien, II, 57 (1902).

Two fronto-orbitals; wings only slightly longer than abdomen and narrow, the anal vein about one-third the length of the underside of the discal cell; front tarsi black. Subgenus *Pteromicra* Lioy. Eur.; Siberia; Alaska. (*Sciomyza*).....**glabricula** Fallen

One fronto-orbital; wings longer and usually broader, the anal vein about half the length of the underside of the discal cell. Subgenus *Dichrochira* Hendel..... 2

2. Arista thickly pubescent; head entirely black except on the pruinose facial orbits; palpi black..... 3

Arista loosely pubescent; head more or less reddish at least near frontal suture..... 4

3. Arista bushy, black, the antennæ reddish; front tarsi entirely black; hypopygium large; wings broad. Yellowstone Park,*...**melanothrix**, n. sp. Arista white, the third antennal joint black; last 2 or 3 joints of front tarsi white; hypopygium small; wings narrow. Wash.,*...**leucothrix**, n. sp.

4. Palpi yellow; last 1 or 2 joints of front tarsi white..... 5

Palpi and third antennal joint black; apical 3 joints of front tarsi white. Mass. (*Dichrochira albicalceata* Cresson, 39).....**albicalceata** Cresson

5. Head largely yellow; front femora yellow only on basal portion; humeri, notopleural suture, scutellum and pleuræ brownish. H. B. T.; Wash.,* Mass., D. C. (*Sciomyza*).....**apicata** Loew

Head largely black; front femora two-thirds yellow; thorax altogether black. Eur.; Pa., Ill., Wisc.,* Wyom.,* Mont.,* Id.,* Wash.,* (*Sciomyza nigrimana* Mg., Syst. Bes. VI, 14 (1830); Schiner, Faun. Austr. II, 45 (1864); Rondani, Prodr. Dipt. Ital. VII, Sciomyz, 42 (1868); Hendel, Abh. z. b. Ges. Wien, II, 58 (1902). *Dichrochira pleuralis* Cresson, 39).....**nigrimana** Meigen

***Pteromicra melanothrix* new species.**

Male—Length, 4 mm. Head, including mouthparts, thorax, abdomen, front legs beyond basal three-fifths of femora, and apex of hind femora black, shining on body, dull on legs, antennæ, base of front legs, posterior legs, halteres and calypteres yellowish, two white pruinose occipital spots. Third joint of antennæ rounded-quadrate, the arista but slightly longer than the antenna, its basal joint thick and one-fourth the length of the arista. Lower pleuræ lightly white pruinose, a faint indication of three brown-dusted vittæ on mesonotum. Abdomen with short pubescence, hypopygium globose. Front femora bearing three small extensor bristles on apical half and hind femora bearing two. Wings a little grayish, veins blackish, the anterior veins brown, posterior crossvein slightly clouded, wings less than three times as long as wide, widest opposite anterior crossvein, first vein ending beyond anterior crossvein and at middle of wing, costal sections proportioned 1 : 1 : 2.5 : 0.9 : 0.6, of fourth vein, 1 : 1 : 1.7.

One specimen. Yellowstone Lake, Wyoming,* August 9, 1918.

***Pteromicra leucothrix* new species.**

Length, 2–3 mm. Head, including mouthparts and third antennal joint, and front legs between the basal three-fifths of the femora and the apical two or three joints of the tarsi black, the body polished, base of antennæ, remainder of legs and halteres yellow, apical joints of front tarsi and arista white, occiput not pruinose. Third joint of antennæ elliptical, the arista twice as long as the antenna, its basal joint short. Lower pleuræ very lightly pruinose. Front femora with three and hind femora with two small bristles above toward apex. Wings nearly four times as long as wide, widest opposite posterior crossvein, nearly hyaline, veins blackish, second vein abnormally long, the costal sections proportioned 1 : 0.6 : 6 : 1 : 0.6, sections of fourth vein, 1 : 1 : 2.

Five specimens. Mount Constitution, Orcas Island, Washington,* July, 1919.

***Melina* Desvoidy. (*Sciomyza* of authors).†**

Melina Desvoidy, Myodaires, 695 (1830).

Arina Desvoidy, same, 696 (1830).

Chetocera Desvoidy, same, 697 (1830).

Pherbellia Desvoidy, Myodaires, 696 (1830).

Dyctia Desvoidy, same, 693 (1830).

Dilatania Hendel, Abhandl. z. b. Ges. Wien, II, 66 (1902).

Graphomyzina Macquart, Hist. Nat. Ins., Dipt. II, 558 (1835).

Atrichomelina Cresson, Tr. Am. Ent. Soc. XLVI, 40 (1920).

Achetomelina Cresson, same, 30 (1920).

† This dominant genus includes most of the species listed in Aldrich's Catalog under *Sciomyza*. Of the several generic names proposed by Desvoidy, *Dyctia* has page precedence, but because of its similarity to *Dictya* Meigen, of the same family, the name *Melina* adopted by Hendel and Cresson, is here used.

- No median polished stripe on the front, the opaque frontal area not bisected. 2
A stripe usually polished on the middle of the front continuing the ocellar
triangle nearly or quite to the antennæ. Subgenus *Pherbellia* Desvoidy. 17
2. Wings not pictured, at most the crossveins clouded. 3
Wings marked with spots or bars in addition to cloudings about the
crossveins; femora and tibiæ of posterior legs centrally annulate.
Subgenus *Graphomyzina* Macquart. 15
3. Two or three fronto-orbitals; mesopleura bare or with posterior setulæ;
propleural bristle evident. Subgenus *Melina* Desvoidy. 4
But one fronto-orbital; mesopleuræ uniformly pubescent; 0 coxal or
abdominal bristles; propleural bristle reduced; ochraceous species
with testaceous legs, the front metatarsi white; ♂ abdomen with
fine close pubescence. Subgenus *Atrichomelina* Cresson. Mass.,*
Ct., N. Y., Pa., D. C.,* Va., Fla.,* Ill.,* Wis.,* La.,* S. D.,* Kans.,*
Tex.,* Mont.,* Id.,* Wash.,* Or.,* Cal.* (*Sciomyza*) *pubera* Loew
4. Bristles of head strong, 3 fronto-orbitals or the anterior midway between
suture and posterior bristle; crossveins clouded; arista nearly bare; legs
slender, front pair black, posterior pairs brown; largely gray species.
Middle States; Me., Mass. (Hough), Md. (*Sciomyza*) *tenuipes* Loew
Two fronto-orbital bristles. 5
5. Mesopleuræ with a row of setulæ along the posterior margin. 6
Mesopleuræ entirely bare of microscopic hairs. 8
6. Occiput, thorax and abdomen, including hypopygium gray piceous,
notum with 4 narrow brown vittæ, visible from in back, abdomen with
paler incisions; front legs mostly black, posterior legs brown; wings
nearly hyaline, the crossveins somewhat clouded; halteres yellow;
3-4 mm. Eur.,* Mont.,* Wyo.* (*Sciomyza griseola* Fall., Dipt. Suec.
Sciomyz, 14 (1820); Meigen, Syst. Bes. VI, 13 (1830); Macq. Suit.
Buff. II, 406 (1835); Zetterstedt, Dipt. Sc. V, 2100 (1846); Schiner,
Faun. Austr. II, 47 (1864); Hendel, Abh. z. b. Ges. Wien, II, 34 (1902).
Sciomyza notata Meigen, Syst. Bes. VI, 14 (1830); Zett. Dipt. Sc. V,
2103 (1846)) *griseola* Fallen
Head, body and legs almost entirely reddish or yellow, hypopygium
yellow. 7
7. Wings with yellowish costal border, the auxiliary, first and second
veins yellow, remaining veins brown; body and legs reddish yellow,
the front tibiæ and tarsi of ♀ dark; arista short-plumose. Eur.,* Me.,
N. H., Col., B. C. (*Sciomyza*) *albocostata* Fallen
All the veins brown, wings uniformly subhyaline, the crossveins some-
times clouded; body and legs usually ochraceous brown; arista plumose;
robust species with large hypopygium. Eur.,* Mass.,* Queb.,* N. Dak.,
Mont.,* Wyom.,* Idaho,* Wash.,* Cal.* (*Sciomyza fuscipes* Meq.,
Suit. Buff. II, 407 (1835); Meigen, Syst. Bes. VII, 363 (1838); Rondani,
Prodr. Dipt. Ital, VII, *Sciomyz*, 44 (1868). *Sc. dorsata* Zetterstedt,
Dipt. Sc. V, 2096 (1846); Schiner, Faun. Austr. II, 46 (1864); Becker,
Act. Soc. sc. Fenn. XXVI, 56 (1900); Hendel, Abh. z. b. Ges. Wien, II,
32 (1902). *Sc. notata* Schiner, Faun. Austr. II, 48 (1864). *Sc. ruficeps*
Zetterstedt, Dipt. Sc. V, 2097 (1846); Rondani, Prodr. Dipt. Ital. VII,
Sciomyz, 41 (1868). *Melina spadix* Cresson, 42. *Melina fusca* Cres-
son, 43) *fuscipes* Macquart
8. Hind femora and tibiæ broadly paler along the center; eyes banded in
life; mesopleuræ golden below, brown above; abdomen fasciate. 9
Hind legs not evidently annulate; eyes uniformly colored. 12
9. Face and occipital orbits with one, cheeks with two brown spots; arista
rather long-plumose; scutellum sometimes yellowish; abdomen polished
except on fasciæ; front legs of ♀ with femora and middle of tarsi blackish;
anterior veins whitish toward base, outer part of wing largely
infumated. N. H.,* N. Y., N. Car. (*Sciomyza albovaria* Coq. Proc.
U. S. N. M. XXIII, 616 (1901)) *albovaria* Coquillett
Head not spotted; arista short-plumose to bare; scutellum blackish;
abdomen not shining. 10

10. Arista short-plumose; mesonotum vittate. Eur.;* N. Y.,* Queb.* (*Sciomyza annulipes* Zett. Dipt. Sc. V, 2113 (1846); Schiner, Faun. Austr. II, 49 (1864); Hendel, Abh. z. b. Ges. Wien, II, 26 (1902)).
annulipes Zetterstedt
 Arista bare or microscopically pubescent; mesonotal vittæ faint. (*vitalis* Cresson).....11
11. Front tarsi entirely black. Mass., Id., Cal. (Cresson, 43).
 var. *vitalis* Cresson
 Front tarsi pale at base. D. C., Wisc. (Cresson, 44). var. *similis* Cresson
12. Abdomen uniformly reddish, contrasting with the mostly grayish thorax; front legs dark brown, posterior legs reddish; arista nearly bare. Eur.;* Id.,* Wash.,* Or. (*Sciomyza ventralis* Fall. Dipt. Succ. Sciomyz. 14 (1820); Zetterstedt, Dipt. Sc. V, 2112 (1846); Schiner, Faun. Austr. II, 50 (1864); Becker, Act. Soc. sc. Fenn. XXXVI, 9, 58 (1900); Hendel, Abh. z. b. Ges. Wien, II, 44 (1902). *Helomyza fuscimana* Roser, Wuerttemb. Corbl. 61 (1840). *Sciomyza rufiventris* Meigen, Syst. Bes. VI, 20 (1830); Macquart, Suit. Buff. II, 408 (1835).
ventralis Fallen
 Abdomen nearly concolorous with the thorax.....13
13. Arista loosely pubescent; incisures of abdomen paler. Eur.;* N. J., Mass., Ont., Wisc., Cal. (Hough); Queb., Ill.,* Nev., Wyom.* (*Sciomyza*).
obtusa Fallen
 Arista nearly bare.....14
14. Wings strongly infumated; blackish species measuring about 3 mm. with dark brown legs, the front pair blackish except the coxæ; halteres black. Pa., Ont. (Hough); Ind.* (*Sciomyza*).....*luctifera* Loew
 Wings nearly hyaline, the crossveins lightly infumated; larger species of gray-brown color with fasciate abdomen; front legs black, contrasting with their whitish coxæ and with the reddish posterior pairs; halteres yellow; antennæ black. Wyo.,* Mont.,* Id.,* Wash.,* B. C.*
palustris, n. sp.
15. Ground-color of wings brown, filled with numerous small rounded hyaline spots; body grayish brown, marked with distinct sepia dots at base of each bristle and setula; eyes broader than deep, the head unusually wide; arista short-plumose. Tex.* (*Sciomyza*).....*guttata* Coquillett
 Wings marked with a few short cross-bars; arista pubescent; eyes nearly round.....16
16. About 5 bars crossing submarginal cell, discal cell with a pair of spots; fourth vein emitting appendage into second posterior cell; a small brown dot at base of each thoracic setula; a velvet black mark between antenna and eye. Tex.,* Mex. (*Sciomyza strigata* Wulp, see Malloch, Can. Ent. 1914, 324). (*Sciomyza*).....*trabeculata* Loew
 Only a preapical crossband in the submarginal cell, markings of discal cell obsolete; no appendiculate vein; thorax with alternate brown and gray vittæ; at most a brown spot beside the antennæ. Eur.;* Mass.,* Ct.,* Ont.,* Queb., N. Y.,* N. J., N. H., Pa., D. C.,* Fla., Ill.,* Ind., Wisc., Ga. (Hough); La.,* Mo., Tex.,* S. D.,* Kans. (Aldrich), Col., Wyom.,* Mont.,* Id.,* B. C.,* Wash.,* Oreg.,* Cal., Mex. (*Sciomyza*).
nana Fallen
17. Mesopleura entirely pubescent or posteriorly setulose; 1 fronto-orbital, 0 sternopleural, 2 pteropleurals, prescutellars strong; oral angle of face acute or perpendicular in profile; arista bare, or nearly so.....18
 Mesopleura bare; 2 fronto-orbitals, prescutellars vestigial; oral margin not prominent; arista pubescent to plumose; species under 5 mm.....19
18. Mesopleura entirely pubescent; thickened basal portion of arista one-third arista-length; abdomen fasciate only; third antennal joint brown; grayish red species; 4 to 5 mm. Eur.; Pa., Fla., Ill.,* Wisc. (Hough). Ga.,* Tex.,* S. D. (Aldrich), Mont.,* Wash.,* Cal.* (*Sciomyza griseascens* Meigen, Syst. Bes. VI, 20 (1830); Macquart, Suit. Buff.

- II, 408 (1835); Becker, Zts. Hym. Dipt. II, 253 (1902); Hendel, Abh. z. b. Ges. Wien, II, 66 (1902). *Sc. brevipes* Loew, N. Beitr. IV, 54 (1856). *Sc. humilis* Loew; Hendel, Wien ent. Ztg. XX, 199 (1901). *Sc. nasuta* Zetterstedt, Dipt. Sc. V. 2114 (1846). **griseus** Meigen
- Mesopleura with a row of setulae along posterior margin; basal portion of the microscopically pubescent arista one-fourth the arista-length; abdomen with three interrupted brown vittae; antennae reddish; robust rust-red species; 6 to 7 mm. Neb., Tex.* (Cresson, 50). **trivittata** Cresson
19. Wing cells with single rows of variable brown spots; about 4 pteropleural bristles. Eur. ; * Queb., N. Y., Ill., Col. (Hough), Wyom., * Mont., * Id., * Wash.* (*Sciomyza Schoenherri* Fall., Dipt. Succ. Sciom. Suppl. 2a, 13 (1826); Zetterstedt, Dipt. Sc. V. 2107 (1846); Schiner, Faun. Austr. II, 50, (1864); Rondani, Prodr. Dipt. Ital. VII, Sciom. 45 (1868); Becker, Act. Soc. sc. Fenn. XXVI, 58 (1900); Hendel, Abh. z. b. Ges. Wien, II, 70 (1902). *Sc. monilis* Meigen, Syst. Bes. VI, 17 (1830). *Pherbellia vernalis* Desvoidy, Myodaires, 696 (1830). *Graphomyza maculata* Cresson, 48) **schoenherri** Fallen
- Wings nearly hyaline, not maculate; oral margin in profile forming an obtuse angle with face. Eur.; Wyom., * Id.* (*Sciomyza brunripes* Meigen, Syst. Bes. VII, 364 (1838); Schiner, Faun. Austr. II, 50 (1864); Hendel, Abh. z. b. Ges. Wien, II, 71 (1902); Becker, Zts. Hym. Dipt. II, 253 (1902). *Sc. coxata* Zetterstedt, Ins. Lapp. 739 (1838). *Sc. pusilla* Zetterstedt, Ins. Lapp. 739 (1838), Dipt. Sc. V, 2115 (1846)). **brunnipes** Meigen

Melina palustris new species.

Length, 4-5 mm. Dark colored species with black front legs, vittate thorax and fasciate abdomen. Front luteous, parafrontal stripes and median triangle gray, reaching half way down the front; face and cheeks pale yellowish, a brown or black orbital spot next the antennae, occiput black, gray dusted, the cervical spot indistinct; antennae quite blackish, the arista black, appearing bare under ordinary magnification, two and a half times the length of the third joint; palpi yellowish. Thorax black in ground color, thickly dusted, gray above and faintly vittate, apex of scutellum reddish, a strong brown-dusted subalar stripe and a weaker stripe along the sternopleural suture, metapleural callosity velvety dark brown, pectus whitish pruinose, balance of pleurae silvery gray; mesopleura entirely bare, pteropleura with a few hairs and two or three bristles anteriorly, sternopleura with fine bristles above. Abdomen blackish, the apices of the sclerites yellow, hypopygium blackish with more or less reddish tinge. Front coxae white, contrasting with remainder of legs, front femora stout and setose, knees narrowly brownish; posterior legs brown, hind femora with about four setae above. Halteres and calypteres pale yellow. Wings hyaline, anterior veins brownish, posterior veins blackish, crossveins scarcely at all infumated, sections of fourth vein proportioned 1 : 0.7 : 1, anal vein slightly more than half the underside of the discal cell.

Over one hundred specimens. Type from Lake Chatcolet, Idaho,* August, 1915. Paratypes, all collected by the author, from Yellowstone Park, Wyoming,* Three-Forks, Montana;* Priest Lake, Moscow and Lake Waha, Idaho;* Pullman and Dungeness, Washington,* and Nelson, British Columbia.*

Hemitelopteryx Cresson.*Hemitelopteryx* Cresson, Trans. Am. Ent. Soc. XLVI, 51 (1920).*Heteropteryx* Hendel (not Gray, 1835), Abh. z. b. Ges. Wien, II, 81 (1902); Cresson, 30 (table), 87 (list).

Head and mouth-parts black, antennæ yellow, front velvety, except the shining median stripe; thorax yellowish, with 2 broad stripes and anterior margin black; abdomen black except basal angles; legs mostly yellow, front coxæ silvery white, front tibiæ and tarsi black, except apical joints; wings blackish; 3.5 mm. N. H., Mass. (Cresson, 51).

johnsoni Cresson**Antichæta** Haliday.*Antichæta* Haliday, Ann: Nat. Hist. II, 187 (1839); Hendel, Abh. z. b. Ges. Wien, II, 78 (1902).

Reddish yellow species, at most the front legs piceous; 2 fronto-orbitals. . . . 2

Head, thorax and abdomen black; 1 fronto-orbital; antennæ yellow, palpi black, arista heavily pubescent; sides of front velvety black; upper pleuræ shining; front coxæ white-pruinose; first vein ending beyond anterior crossvein. Wisc.*. . . . *melanosoma*, n. sp.

2. Palpi and third antennal joint black, thorax shining, the notum centrally pollinose except for 2 brown vittæ, upper pleuræ shining; more or less of front femora and tibiæ and all tarsi brown, front coxæ white; abdomen brown, ♂ genitalia reddish. Eur., Mass. (Loew coll.) (*Sciomyza analis* Meigen, Syst. Bes. VI, 15 (1830); Zetterstedt, Dipt. Sc. V, 2104 (1846). *Antichæta analis* Hendel, Abh. z. b. Ges. Wien, II, 79 (1902).

Tetanocera vittata Haliday, Ent. Mag. I, 168 (1833). *Sciomyza vittata* Rondani, Prodr, Dipt. Ital. VII, Sciom. 43 (1868). . . . *analis*, Meigen

Palpi and antennæ yellowish; pleuræ more or less pollinose above. . . . 3

3. Dark ferruginous, thorax heavily pollinose, trivittate with black; front coxæ and posterior legs yellowish, remainder of front legs piceous; eyes deeper than long; 6 mm. Mont.*. . . . *robiginosa*, n. sp.
Testaceous, notum not vittate; legs yellowish; eyes longer than deep; 5 mm. Mont.*. . . . *testacea* n. sp.

Antichæta robiginosa new species.

Female—Length, 6 mm. Ferruginous; head testaceous, face and cheeks yellow and overlaid with white pruinosity, a bigeminal silvery white cervical spot on cinereous ground; middle frontal stripe shining, with parallel sides, about one-fifth the width of the front and attaining the suture; front slightly wider than long, a little narrowed anteriorly, the triangular lunule nearly hidden, two fronto-orbitals; eyes large, rounded, face receding at an angle of ninety degrees to the front, cheeks about one-third the diameter of the eye; antennæ ferruginous, second joint short, obconic, third joint ovoid, one-half longer than deep, with a slight infuscation above, arista black, finely plumose, but one-half longer than the third joint of the antennæ; palpi long, testaceous, black-setose. Mesonotum centrally blackish overlaid with gray pollen, trisected by two narrow opaque stripes of golden brown pollen, a stripe of whitish yellow pollen above notopleural suture; upper pleuræ rusty, lower white-pruinose, the ground color of the sternopleuræ largely black; thoracic bristles strong, one humeral, two notopleural, one presutural, one supra-alar, two intra-alar, two dorsocentral, no pre-scutellar, four scutellar, no pleural. Abdomen brown, black-setulose,

fifth tergite broadly emarginate and apically fringed with three bristles on each side. Front coxæ testaceous, but silvery pollinose, remainder of front legs piceous, the tarsi black, posterior legs including tarsi testaceous, front femora with five extensor bristles, front tibiæ with one preapical, two or three anterior bristles on middle femora, four extensor and a few short irregular bristles on hind femora, the two preapical bristles of hind tibiæ large. Halteres and calypteres brownish yellow. Wings uniformly infumated, a little stronger along the costa and besides the posterior crossvein; veins dark brown, first vein ending a little before the anterior crossvein, posterior crossvein straight, costal sections proportioned 1 : 1 : 3 : 1.2 : 0.7.

One specimen. Three Forks, Montana,* August 1, 1918.

***Antichæta testacea* new species.**

Male—Length 5.2 mm. Occiput yellow, cervical spot brown, front luteous, periorbits subshining, extending half way to suture, middle stripe with parallel sides, complete, face, cheeks and lower occiput pale, profile very slightly concave and receding, cheeks one-third the eye-height, eyes horizontally oval, two fronto-orbitals; antennæ reddish, first joint minute, second bowl-shaped, shorter than deep and one-third as long as the oval third joint, arista black except its basal joint, its hairs moderately long and loose. Thorax entirely testaceous, not heavily dusted; genitalia large, yellow. Legs yellow, last tarsal joint darkened, front femora with about six bristles above and hind femora with about three above and eight below; middle femora with two small bristles in front near center. Halteres yellow. Wings hyaline, veins thin, yellowish, apically and crossveins darkened, posterior crossvein straight and perpendicular to fifth vein.

Holotype. Collected by A. D. Hastings, June 11, 1904, in Gallatin County, Montana.*

***Antichæta melanosoma* new species.**

Female—Length, 4.5 mm. Body black, legs mostly yellow. Front wider than long, quadrate, middle stripe shining, parallel-sided, attaining suture, as broad as each of the opaque side stripes, periorbits shining, only one fronto-orbital; lower orbits pruinose and yellowish, center of face triangularly black, cheeks about one-fifth eye-height, lower occiput brown, upper shining black, with bigeminal silvery spot; mouthparts black; antennæ yellow, second joint shorter than deep, third joint oblong-oval, one-third longer than deep and half as long as arista, the base of the bushy black arista stout. Notum subshining, lower pleuræ pruinose, chætotaxy as in *A. robiginosa*, upper surface of abdomen shining. Legs, including coxæ, yellow; front coxæ with silvery sheen, the front legs black beyond three-fifths of the femur, two preapical bristles on hind tibia. Halteres, calypteres and root of wing yellow, wings hyaline, veins brown, not infumated, costal sections proportioned 0.8 : 1 : 1.2 : 0.8 : 0.5, anterior crossvein at middle of discal cell.

One specimen. Polk County, Wisconsin, July, collected by Professor C. F. Baker and transmitted by Dr. Aldrich.

Renocera Hendel.

Renocera Hendel, Verh. z. b. Ges. Wien, L. 333 (1900); Abh. z. b. Ges. Wien, 11, 74 (1902). Cresson, 51.

- Two fronto-orbitals; mesonotum opaque, vittæ distinct; cheeks nearly equal to eye; no humeral, prescutellar or presutural bristles, 1 dorsocentral; front tarsi black. 2
- One fronto-orbital; mesonotum subopaque, vittæ faint; cheeks narrower; base of tarsi light colored. 3
2. Third antennal joint quadrate, scarcely one-half longer than deep; uniformly ochraceous; posterior crossvein inflexed. Mont.*
quadrilineata, n. sp.
- Third antennal joint broadly rounded, nearly twice as long as deep; abdomen with brown median vitta; posterior crossvein nearly perpendicular to fourth vein. Me., B. C. *johnsoni* Cresson
3. Arista very densely plumose to tip; third antennal joint tapering to the rounded apex, slightly concave above. N. H., N. Y., Pa. (*Sciomyza*).
longipes Loew
- Arista loosely plumose or pubescent; third antennal joint rounded oblong. . . 4
4. Arista very short pubescent; cheeks one-third the eye-height; periorbital shining stripe undeveloped; femoral and abdominal bristles present. N. Y. (*Chaetomacera brevis* Cresson, 58) *brevis* Cresson
- Arista short plumose; periorbital stripes shining; abdominal bristles weak. 5
5. Apical 2 tarsal joints black; notum not vittate, sparsely pruinose medially; cheeks one-fourth the eye-height; anterior margin of front shining; femoral bristles weak. Me., N. H. (Cresson, 54) *amanda* Cresson
- Last tarsal joint black; notum quadrivittate, scarcely shining; cheeks one-half the eye-height; anterior margin of front dull; femoral bristles present. Wash.* *cyathiformis*, n. sp.

Renocera cyathiformis new species.

Male—Length, 6 mm. Ochraceous, frontal stripes, face, cheeks, antennæ, palpi, halteres and legs yellow. Interfrontal stripe narrow and attenuated anteriorly, reaching the luteous opaque frontal margin, orbital stripes golden pollinose, reaching half way down the front, sides of front gently arching so as to constrict the front at the antennæ to two-thirds its width at the ocelli, anterior fronto-orbital vestigial; second joint of antennæ very short, bowl-shaped, much deeper than long, with numerous fine setulæ, third joint oblong oval, one-half longer than deep, the arista black, with short and rather sparse hairs; cheeks half the width of the circular eyes; palpi yellow. Thorax as in *Tetanocera*, quadrivittate, dusted, scarcely shining, one humeral, two notopleural, one presutural, one supra-alar, one intra-alar, two dorsocentral, one prescutellar, four scutellar, no propleural or other pleural bristles, sternopleuræ alone sparsely hairy. Abdomen without strong bristles, base of end-paramera of hypopygium thin and circular, terminal portion short. Middle femora with one anterior bristle; hind femora with two bristles above and about four below in the anterior row, in addition to the many flexor setæ, which are less pronounced than in species of *Tetanocera*; last tarsal joint black. Wings with strong and uniform yellow tinge, anterior veins yellow, posterior veins brown, costal region not clouded, crossveins lightly infumated, posterior crossvein straight

and transverse, sections of costa proportioned 1 : 1 : 1.5 : 1 : 0.6, of fourth vein, 1.3 : 1 : 1.4, third vein gently curved, ending at wing-tip, parallel with fourth vein, anal vein reaching margin, as long as last section of fourth vein.

One specimen. Mount Constitution, Orcas Island, Washington,* August 7, 1909.

Renocera quadrilineata new species.

Female—Length, 5 mm. Light ochraceous; front one-third broader than long, scarcely tapering anteriorly, the impressed shining middle stripe occupying one-sixth of the front, parallel-sided and attaining the suture, sides of front anteriorly yellow, two rather small fronto-orbitals; face and cheeks almost white and satiny, the cheeks nearly as wide as the circular eye; antennæ short, reddish yellow, the topmost setula of the small second joint strong, third joint quadrate-oval, one-half longer than deep, the black arista nearly twice the length of the third joint, with short sparse fine plumosity; palpi yellow, with very fine sparse black hairs. Thorax prettily marked with four chocolate brown stripes, the middle pair complete and expanding before the scutellum, the outer pair shortened in front and interrupted just behind the cross-suture, notal setulæ rather sparse, black and unusually distinct, chæto-taxy reduced to two notopleural, one supra-alar, two intra-alar, one dorsocentral and four scutellar bristles; a light brown stripe along upper pleuræ, lower pleuræ pale ochraceous, sternopleuræ with a few fine setulæ. Legs yellowish, front tarsi black, about five small bristles above and eight short setæ below on front femora, middle femora with one anterior bristle, hind femora without bristles, but with a double row of stout spines beneath along the apical half, each row containing about ten; tibial bristles small. Halteres and calypteres yellow. Wings with strong yellowish tinge, blackened along the crossveins, veins basally yellowish, apically black, costal sections proportioned 1.2 : 1 : 2 : 1 : 0.6, three sections of fourth vein subequal, posterior crossvein straight, third vein gently curved, ending at wing-tip, anal vein strong.

One specimen. Three Forks, Montana,* August 1, 1918.

Poecilographa Melander.

Poecilographa Melander, Psyche, XX, 205 (1913.)

Poecilomyia Melander (not Hendel, Richardiinae), Psyche, XX, 58 (1913).

Yellow, the broad convex shining interfrontalia blackish except medially, bristles of head and thorax arising from conspicuous brown spots, six pleural brown spots, three rows of light brown spots on abdomen, femora with a brown mark below toward tip; wings with a well defined brown pattern, radiating along costa and apex and forming hyaline round spots elsewhere. 4 mm. Me., N. Y., Can., N. J., Pa., Ill., Wisc.,* Col. (*Sapromyza*).....**decora** Loew

Dictyomyia Cresson.

Dictyomyia Cresson, Trans. Am. Ent. Soc. XLVI, 82 (1920).

Brown, lower frontal orbits velvety black, a similar orbital spot below antennæ, both sets irregularly margined with white pruinosity, notum and abdomen with numerous darker dots; legs mostly testaceous; wings with blackish costal margin, roughly with two rows of spots in marginal cell, four in submarginal, three in first posterior, other cells more irregular; 6 mm. Me., Queb.,* Wyom. (Hough). (*Tetanocera*)..... **ambigua** Loew

Euthycera Latreille.

Euthycera Latreille Cuvier, Regn. Anim. V, 529 (1829).

Lunigera Hendel, Verh. z. b. Ges. Wien. L. 344 (1900).

Yellowish, face silky white, lunule and 2 orbital spots black, notum with small brown setigerous spots, scutellum blackish, with velvet black margin and apical white dot; third antennal joint rounded triangular, slightly shorter than the quadrate swollen second joint; wing markings variable, the diluted spots in marginal cell irregular and numerous; 5 to 8 mm. N. H., N. Y., Queb.,* Ont., Pa.,* N. J., Md., Va., Car., Mid. States, Ind.,* Ill., Wisc.,* Tenn., Nebr. (*Tetanocera flavescens* Loew, 1847, not Desvoidy, 1830, not even a valid variety. *E. uniformis* Cresson, 74, *Tetanocera*)..... **arcuata** Loew

Similar; second antennal joint shorter than third; the diluted spots of marginal cell quadrate and regular, those of submarginal and first posterior cells rounded. Me., N. H., N. Car. (Cresson, 74)..... **borealis** Cresson

Trypetoptera Herdel.

Trypetoptera Hendel, Verh. z. b. Ges. Wien, L. 352 (1900).

Reddish yellow, face pale yellow, greatly receding, a brown spot beside antennæ, legs yellow, notum not spotted; second antennal joint short, nearly square, third joint short, bluntly triangular; costal border blackish, reticulations rather close and guttated, about six clear dots before second vein which scarcely reach the costa; anterior crossvein before middle of discal cell; 7 mm. Queb., Vt., N. Y., N. J.,* Pa.,* Md., Va., Mid. States, Ill.,* Ind.,* Col., Út., N. Mex., Wyom.* (*Tetanocera pallida* Loew). (*Tetanocera*)..... **canadensis** Macquart

Hoplodictya Cresson.

Hoplodictya Cresson, Trans. Am. Ent. Soc. XLVI, 67 (1920).

Legs more or less marked with brown; third antennal joint scimitar-shaped; wing-pattern dark brown, posterior crossvein gently arched; metapleural callosity black; posterior processes of hypopygium small and more or less triangular..... 2

Legs yellow except the dark tips of the tarsi; third antennal joint with rounded tip; wing-pattern flavous, the pale spots weakly defined, posterior crossvein gently sinuous; metapleural callosity brown; posterior processes of hypopygium long, paramera large, compressed, reniform; 7 mm. Mass.,* N. Y.,* Ga. (*Tetanocera*)..... **setosa** Coquillett

2. In general 4 square spots in marginal cell in addition to other smaller spots, anterior crossvein before middle of discal cell; all femora with 3 incomplete dark rings; third antennal joint pointed; 4-5 mm. Cuba, Md., Fla., La.,* Tex.,* Nev., Cal. (*Tetanocera*)..... **spinicornis** Loew

In general 5 square spots in marginal cell beyond end of first vein, anterior crossvein at middle of discal cell; posterior femora with a single dark spot underneath just beyond middle, front femora entirely yellow; third antennal joint bluntly pointed; 5-6 mm. Bermuda.* (*Tetanocera kincaidi* Johns., Ann. Ent. Soc. Am. VI, 449, 1913)..... **kincaidi** Johnson

Dictya Meigen.

Dictya Meigen, Illig. Mag. II, 277 (1803), not Fabricius, Syst. Antl. 325 (1805), and not *Dyctia* Desvoidy.
Monochætophora Hendel, Verh. z. b. Ges. Wien. L. 335 (1900); Cresson, 68.

Meigen founded his genus *Dictya* on specimens of *umbrarum* Linn., but unfortunately credited the species to Fabricius instead of Linnæus. As *umbrarum* Fabr. is a different insect, belonging to the ortalid genus *Platystoma*, Cresson would make *Dictya* a synonym of *Platystoma*, and revive for the species *umbrarum* Linnæus Hendel's genus *Monochætophora*, abandoned in the Catalog of Palaearctic Diptera. Such a course carries the technical letter of nomenclatorial law unnecessarily far, for it is as difficult to conceive how the sciomyzid genus *Dictya* can be converted into an ortalid as for the proverbial leopard to change its spots.

Brownish, body and even femora with abundant dark setigerous spots, face yellowish, with central black dot, tip of front tibiæ and all femora with blackish marks; wings dark, with numerous small rounded hyaline spots; arista loosely plumose with black; front without shining stripes; 6 mm. Eur., Mass.,* N. H., Ct.,* Queb., N. Y.,* Pa., N. J., Md., D. C.,* Va., N. Car., Fla., Ga., Ia., Ind.,* Ill.,* Wisc., Ga., La., Tex.,* Kans.,* Dak., Neb., Man., Nev., Ariz., Col., Id.,* Wash.,* Or.,* Cal.,* Mex. (*Tetanocera pictipes* Loew). (*Tetanocera*).....**umbrarum** Linnæus

Elgiva Meigen.

Elgiva Meigen, Syst. Bes. VII, 366 (1838).
Chione Desvoidy (not Megerle, 1811, Mollusca), Myodaires, 679 (1830).
Ilione Haliday, Westwood's Introd. Classif. Ins. 146 (1840).
 Reddish yellow, notum lightly cinereous, with two approximate median and one lateral vittæ; face and arista white; wings whitish, costa brownish, submarginal cell hyaline, the crossveins and a longitudinal stripe behind the third vein gray, fourth vein with one or two weak spots between the crossveins. Eur.,* Me. (Boston Soc. Nat. Hist., Johnson, in litt.) (*Tetanocera lineata* Fall., not Day, Dipt. Succ. Sciom. 11 (1820); Meigen, Syst. Bes. VI, 43 (1830), VII, 366 (1838); Loew, Dipt. Beitr. I, 46 (1845); Zetterstedt, Dipt. Sc. V, 2114 (1846); Walker, Ins. Brit. II, 167 (1853). *Ilione lineata* Haliday, Westw. Introd. Classif. Ins. 146 (1840). *Elgiva lineata* Schiner, Faun. Austr. II, 63 (1864)).....**lineata** Fallen

Hedroneura Hendel.

Hedroneura Hendel, Wien. ent. Ztg. XX1, 265 (1902).
 Ferruginous, face and cheeks pale yellow, silky, front wider than long, two orbital spots; antennæ reddish, second joint longer than third, the last bluntly triangular, arista white with yellow base; hind femora irregularly spinose beneath; wings yellowish in front, lightly brownish behind, with blackish spots below end of second vein, on anterior crossvein and at front end of posterior crossvein, irregular clouds also in apical cells; 7 mm. Eur.; Ct., Ont., N. Y., Ill., Wisc., Col., Wyo.,* Mont.,* Id.,* Nev., Wash.,* Or., B. C., (Cole). *Musca rufa* Panzer, F. Germ. 54 (1798). *Tetanocera rufa* Loew, Dipt. Beitr. 1, 42 (1845); Zetterstedt, Dipt. Sc. V, 2141 (1846); Schiner, Faun. Austr. II, 63 (1864); Rondani, Prodr. Dipt. Ital. VII, Sciom. 15 (1868). *T. cucularia* Fabricius, Sp. Ins. II, 449 (1781). *T. lineata* Day, not Fallen. *T. Sundewalli* Fries, Monogr. Tanypez. Succ. 17 (1823).**rufa** Panzer

Limnia Desvoidy.*Limnia* Desvoidy, Myod. 684 (1830).*Oregocera* Rondani, Prodr. Dipt. Ital. 1. 106 (1856), VII, Sciom. 23 (1868).

- The brown costal margin distinctly interrupted by clear spots; eyes round; arista loosely plumose, third antennal joint but slightly excised above. (*Boscii* Desvoidy)..... 2
- The uninterrupted brown costal border attaining apex of the wings; eyes horizontally oval; arista closely plumose to tip, third antennal joint distinctly excised above..... 3
2. Brown spots of wings paired so as to form transverse double bands, interspaces yellow. Me., Mass.,* Ct., Ont., Queb., N. Y., Pa., N. J., Md., Va., N. Car., Mid. States, Ill.,* Wisc.,* Col., Mont. (*T. combinata* Loew). (*Tetanocera*)..... **Boscii** Desvoidy, s. str.
- Wing reticulation uniform, not forming cross-bands, interspaces hyaline. Me., N. H., Queb., Ont.,* N. Y., N. J., Mid. States, Mont.,* Wash.* (*T. inopa* Adams). (*Tetanocera*)..... **Boscii** var. **sparsa** Loew
3. Robust species, 7 to 8 mm. in length; second antennal joint much longer than third and strongly bristly above. Id.,* Wash.,* Or.,* Cal. (*Tetanocera*)..... **pubescens** Day
- Length 4 to 7 mm.; second antennal joint not much longer than third and not remarkably setose above, usually only bisetose..... 4
4. Second antennal joint with distinct dark spot, third joint short and blunt; frontal bristles weak; costal margin dark, with small round spots in marginal and submarginal cells; scutellum yellow. Md. (Cresson, 78)..... **shannoni** Cresson
- Antennæ not maculate, third joint more acute; frontal bristles strong; scutellum often darker..... 5
5. Posterior crossvein nearly straight and perpendicular; prescutellar bristles vestigial or wanting. (*costalis* Loew)..... 6
- Posterior crossvein distinctly sinuous; prescutellar bristles more or less developed..... 8
6. Scutellum uniformly yellow, contrasting with the mesonotum. notal vittæ faint; submarginal cell with elongate dark spots along the second vein, the median streaks almost obliterated. N. H., N. Y., Md., Ill. var. **costalis** Loew, s. str.
- Scutellum not contrasting with mesonotum; dark spots of submarginal cell usually short, median streaks usually evident..... 7
7. Brown of costal margin continuing unbroken to or beyond fourth vein; mesonotal vittæ strong, distinct brown vittæ present between the narrow median yellowish stripe and the lateral gray vittæ; hypopygial paramera square and bare, with prong at middle of apical edge. Mont.,* Id.,* Wash.*..... **costalis** var. **vittata**, n. var.
- Brown of costal margin stopping at third vein; mesonotal vittæ faint. Avon, Id.,* 26 July, 1912..... **costalis**, var. **brevicostalis**, n. var.
8. Notal setulæ abundant, about 4 irregular rows on the central vitta; cheeks less than half the eye-height; pubescence of arista longer and more open; front wider than long..... 9
- Notal setulæ sparse, about 2 rows on the central stripe; cheeks more than half the eye-height; pubescence of arista short and close, almost appressed; sides of interfrontal stripe parallel; some pale spots touching second vein, about 14 pale spots in first posterior cell; dark spot at posterior fronto-orbital weak; lower pleuræ with yellow tinge. (*saratogensis* Fitch)..... 11

9. Wings almost uniformly brown, the costal border and faint spottings near the veins darker; vellar and pleural setulæ weak; flexor spines of hind femora ♂ moderately strong; tibiæ and base of tarsi ♂ light brown; both fronto-orbitals arising from black spots. Ga.* *georgiæ*, n. sp.
Wings with definite hyaline markings, about 18 clear spots in first posterior cell; vellar and pleural setulæ relatively strong; flexor spines of hind femora ♂ well developed; apex of front tibiæ brown ♂, or black ♀; front tarsi proximally brown ♂ or entirely black ♀. (*louisianæ*, n. sp.).....10
10. Arista heavily plumose; interfrontal stripe ♀ widest between the anterior fronto-orbitals. La.*..... *louisianæ*, s. str.
Arista short-plumose; interfrontal stripe relatively narrow and nearly parallel-sided. D. C.,* Ind.*... *louisianæ*, var. *septentrionalis*, n. var.
11. Underside of hind femora ♂ strongly spinose; front wider than long; wing-spots nearly hyaline. Olga, Wash.*. *saratogensis*, var. *armipes*, n. var.
Underside of hind femora ♂ moderately or weakly spinose; front square or slightly longer than wide.....12
12. Infuscation of wing evanescent basally; only tip of front tibiæ and more or less of front tarsi dark.....13
Wing-pattern intense, infuscation not evanescent basally; apical half of front tibiæ and all of front tarsi black. Cal. (Cresson, 80).
saratogensis, var. *severa* Cresson
13. A dense double patch of black setulæ on third sternite, paramera pentagonal and nearly bare; second antennal joint not longer than deep. Ottawa*..... *saratogensis*, var. *ottawensis*, n. var.
No patch of setulæ on third sternite; second antennal joint somewhat longer than deep. Me., Mass.,* N. H., Vt.,* Ct., N. Y.,* Ont.,* Queb.,* N. J., Pa., Md., D. C.,* Va., N. Car., Wisc., Ill.,* Ind.,* Mo., Minn., Dak., Mont.,* Sask., Wyom., Wash.,* B. C.,* Cal. (*Tetancera*)..... *saratogensis* Fitch, s. str.

Limnia georgiæ new species.

Male—Length, 5 mm. Front and occiput fulvous, face and cheeks sericeous pale yellow, three fronto-orbital black marks well developed, a cervical brown spot, anterior orbits silvery; front nearly quadrate, slightly wider than long, the middle stripe occupying a little more than one-fifth of the front, somewhat widening anteriorly; antennæ yellow, second joint quadrate, longer than the third, with two setæ above, third joint emarginate dorsally, with rounded tip, arista defective. Thorax ferruginous, two dorsal vittæ, sides of notum and lower pleuræ cinereous, metapleural callosity brown; notal setulæ strong and close, pleural setulæ weak. Abdomen piceous brown, fourth sternite with distinct patches of black spicules. Legs yellowish, tarsi apically dark, flexor spines of hind femora moderate. Knob of halteres infuscated. Wings entirely brown, becoming flavescent around the anterior cross-vein, no hyaline reticulations or brown bars, costal portion darker, a few vague, slightly darker spots near the veins, sections of fourth vein equal, posterior crossvein sinuous.

Holotype: Tifton, Georgia,* June 13, 1896, received from Dr. Hough, whose manuscript name has been retained for the species.

Limnia louisianæ new species.

Male—Length, 6 mm. Head fulvous, cheeks and face sericeous white, a square cervical and three round orbital spots black; front wider than long, middle stripe occupying nearly one-fourth of the front, widest anteriorly; second joint of antennæ oblong, with two dorsal converging bristles, third joint triangular, shorter than the second, reddish at base and distally brownish, arista as long as the antennæ, loosely and long plumose. Notum ferruginous, bivittate with gray, setulæ close and evident, but lacking on the grayish lateral stripes; upper pleuræ fulvous, lower testaceous and pollinose, metapleural callus brown, pleural setulæ unusually strong, especially the vellar pair. Abdomen grayish brown. Legs yellowish, apex of tibiæ brownish, tarsi distally dark, flexor setæ of hind femora strong. Halteres tipped with brown. Wings strongly infumated along costal portion so that no hyaline areas touch the second vein, remainder of wing with numerous quadrate hyaline areas which frequently coalesce, posterior crossvein straight in front and sinuous behind; middle section of fourth vein slightly longer than the others.

Female—7 mm. Front and its middle stripe slightly broader; apex of front tibiæ and all of front tarsi black, hind femora tipped with brown.

Opelousas, Louisiana,* March, 1897, received from Dr. Hough, whose manuscript name has been retained.

Var. *septentrionalis*, n. var. Feathering of arista shorter; interfrontal stripe nearly parallel-sided; pleural setulæ less pronounced; reticulation of wings more definite and wider spread, the paler portions with yellowish tinge, a row of square marks touching the second vein.

Male and female, Washington, D. C.,* 17 August, 1913. A male, Lafayette, Indiana,* 4 July, 1914, has narrow interfrontal stripe and lacks the black spot at the base of the posterior fronto-orbital bristle.

Limnia saratogensis Fitch.

This species is widely distributed and is either variable or is a composite of several forms. The coordinate European species *L. unguicornis* Scopoli differs as set forth below:

L. unguicornis: Elevated patches of black setulæ present on fourth and fifth sternites; paramera bluntly triangular with tumid apex; notal setulæ abundant, about four rows on middle vitta; reticulation of wings usually evanescent behind fourth vein and weak along second vein; cervical spot large and black.

L. saratogensis: Patches of setulæ scarcely or not elevated on fourth sternite and absent on fifth; paramera irregular; notal setulæ not abundant, about two rows on middle vitta; wing-pattern more or less developed in discal and third posterior cells, not weakening along second vein; cervical spot less intense.

Tetanocera Dumeril.*Chaetomacera* Cresson, Trans. Am. Ent. Soc., XLVI, 54 (1920).

Cresson would discard the long established and well understood *Tetanocera*, even though he has not seen the original paper of 1798, mentioned by Osten Sacken, basing his argument upon a later and apparently different edition. As little is to be gained by the overthrow of important names until every doubt has been removed, the genus name *Tetanocera* will be here retained in its accepted usage.

- Wing cells with brown cross-markings in addition to clouding of the crossveins; frontal orbits polished, interfrontal stripe reaching frontal suture; hind femora with 2, rarely 3, extensor bristles..... 2
- Wings not lattice-marked, the crossveins clouded; frontal orbits usually subshining, interfrontal stripe stopping usually before the suture; hind femora with 3 or more stouter extensor bristles..... 3
2. Interfrontal stripe slightly wider anteriorly, parafrontal stripes extending but little in front of forward bristle; spots before second vein indistinct, 5 spots in submarginal, 3 in first posterior cell, anterior part of discal cell with 1 or 2 spots, hind crossvein oblique. N. H., Mass., N. Y., Ct., N. J.,* Pa., Md., Va..... **clara** Loew
- Interfrontal stripe with parallel sides, frontal stripes extending much beyond anterior fronto-orbital; about 8 distinct spots in marginal cell, 4 in first posterior, both sides of fifth vein with spots, posterior crossvein more nearly perpendicular. Me., N. H., Vt., Mass., R. I., Pa. (Hough), Queb., Ont.,* N. Y., Ill., Col.,* Wyo.*..... **valida** Loew
3. Anterior margin of front shining and connected with 3 polished stripes; paramera biexplanate at tip; hind femora apically narrowly brown; wings slightly infumated, crossveins browned, posterior crossvein nearly straight; arista with long loose plumosity. Eur.* Man. (Meigen, Syst. Bes. VI, 41, 1830; Cresson, 65)..... **silvatica** Meigen
- Anterior margin of front dull; paramera more or less pointed, rounded, or truncate..... 4
4. Frontal orbits almost as wide as median stripe and polished, the median stripe continuing almost to the suture; hind femora of ♂ with 3 or 4 bristles in front and with the flexor spines not dense, of ♀ with 2 such bristles; thoracic vittæ scarcely darker; third antennal joint triangular, plumosity of arista moderately close; ocelli equidistant; posterior crossvein little curved and rather perpendicular; scutellum nearly devoid of setulæ; paramera ham-shaped, the terminal part slender and uncinatæ. Me., Mass.,* N. H., Vt.,* N. J., Ct., N. Y., Pa., D. C., N. Car., Queb., Ont.,* Ill.,* Col., Mont*, Wash.,* B. C..... **plebeia** Loew
- Paraorbits only subshining, narrow..... 5
5. Arista bushy-plumose, third antennal joint subtriangular, excised above, second joint with 2 or 3 long bristles above, of ♂ quadrate in outline, of ♀ somewhat longer; cervical spot distinct, with blackish center, orbito-antennal spot black or brown, interfrontal stripe widest about two-thirds its length and almost reaching suture, ocelli equidistant; hind femora ♂ with 3 or 4 dorsal bristles and below densely bristly and spinose, of ♀ with 4 or 5 dorsal and 3 anterior bristles; costal margin infumated, posterior crossvein sinuate and oblique..... 6
- Plumosity of arista relatively less dense, third antennal joint less or not at all drawn out; posterior crossvein arcuate or straight and less oblique..... 8

6. Paramera of hypopygium in outline somewhat ham-shaped, terminating in a thin strip; third antennal joint more acutely triangular; general color ochraceous, thoracic vittæ usually quite indistinct. 7
 Paramera short, the thickened portion hourglass-shaped, with explanate and obliquely truncate end; interfrontal stripe usually not bordered by brown; third antennal joint bluntly triangular; general color ferruginous, thoracic vittæ distinct; middle tibiæ with preapical bristle. Wash.,* Id.,* Cal.* *obtusifibula*, n. sp.
7. Middle femora with preapical bristle on posterior side, hind femora with 4 extensor bristles; paramera apically narrow and angulate. Mass.,* N. H., Vt., Ct., N. Y., Pa.,* N. J., Md., Va., Can., Mich. (Hough), Wis.,* Ill.,* Mo., Col. (Hough), N. Mex., Wyo.,* Mont.,* Ut., Nev., Wash.,* Or. (Cole), Cal.,* B. C.,* Alaska*, Mex. (*plumosa* Loew) *vicina* Macquart
 Middle femora lacking preapical bristle, hind femora with 3 extensor bristles; paramera apically broad and ribbon-like. Mont.,* Id.,* Wash.* *soror*, n. sp.
8. Right underside of last hypopygial segment bearing a strong thumb-like process, basal portion of terminal paramera elongate and parallel-sided, fifth tergite ♂ subquadrate, the fourth sternite with two apical dense patches of black spinules; third antennal joint ovoid, the arista loosely plumose; interfrontal stripe narrow, stopping at opaque border of frontal suture, and not bordered with brown, no antennal or cervical dark spots; posterior ocelli approximate; costal border not dark. Mont.,* Wyom.,* Wash.* *papillifera*, n. sp.
 Hypopygium symmetrically globose, fifth tergite ♂ laterally rounded, the fourth sternite with less evident patches of setulæ; interfrontal stripe encroaching on opaque frontal margin. 9
9. Upper side of third antennal joint distinctly excised, arista moderately plumose; usually a trace of the antennal-orbital spot, cervical spot with brown center; ocelli usually equidistant; hind femora ♀ usually with 3 bristles above and 3 in lower anterior row; costal margin scarcely clouded. 10
 Third antennal joint ovoid, but slightly flattened above; posterior ocelli usually approximate; no posterior preapical bristle on middle femora, hind femora of known females with 1 or 2 bristles beneath on anterior edge. 11
10. Paramera short, broad and thin, irregularly rhomboidal, the apical portion semicircular; a strong preapical bristle on posterior side of middle femora; posterior crossvein arcuate. N. H., Ont.,* Queb.,* N. Y., Ill.,* Wis.,* Col., Wyo.,* Mont.,* Wash.,* B. C., Alaska.* *triangularis* Loew
 Paramera long and slender, densely setulose along lower edge; middle femora lacking the preapical bristle; posterior crossvein nearly straight. Eur.,* Ont., N. Y. (Fallen, Dipt. Suec., Sciom. 9 (1820); Cresson. 64). *ferruginea* Fallen
11. End portion of hypopygial paramera spirally hooked, much longer than basal portion; antennal and cervical spots distinct; plumosity of arista rather short and close; thorax vittate; costa clouded, posterior crossvein straight and nearly perpendicular; 6 mm. Mont.* *spirifera*, n. sp.
 End portion of the contorted pollinose paramera expanded leaf-like and transparent; no orbital or cervical dark spots; front semitranslucent, the stripes not strongly differentiated; hairs of arista long and sparse; thorax not vittate; costa and apical veins somewhat clouded; 5 to 6.5 mm. 12
 Paramera narrowly triangular, the end and basal portions more or less merging; arista openly plumose, the hairs long; 6 to 8 mm. 13

12. Paramera constricted at middle, basal part ventrally setulose, edge of hypopygium deeply excised in front of paramera; posterior crossvein nearly straight. Eur.,* Me. (Loew, Stettin. Ent. Ztg. VIII, 199 (1847); Schiner, Faun. Austr. II, 57 (1864); Hendel, Verh. z. b. Ges. Wien, L. 337 (1900); Cresson, 59)..... **unicolor** Loew
 Paramera large, not constricted at beginning of the expanded apical part, not setulose, edge of hypopygium straight; posterior crossvein curved. Wash.*..... **phylophora**, n. sp.
13. End of paramera tapering; costal margin clouded, posterior crossvein perpendicular, fourth vein frequently with stubs. Can., Vt.,* N. H., Ct., N. Y.,* Wisc., Col., Mont.*..... **rotundicornis** Loew
 End of paramera duckbill-shaped; costa not clouded, posterior crossvein rather oblique. Wyo.,* Mont.*..... **montana** Day
 End portion of paramera suddenly constricted and blunt; costal margin distinctly clouded, posterior crossvein arched and oblique. Eur.,* N. H., Vt., Ct., N. Y., D. C. (Fabr. Sp. Ins. II, 441 (1781); Schiner, Faun. Austr. II, 53 (1864); Hendel, Verh. z. b. Ges. Wien, L. 342 (1900); Cresson, 59)..... **elata** Fabricius

Tetanocera soror new species.

Length, 6 to 9 mm. Very close to *T. vicina* Macq., the general size of about seven millimeters being slightly smaller. Ochraceous, interfrontal stripe parallel-sided, bordered with brown, cervical and antennal orbital spots black; second antennal joint shorter than the acute third, arista very densely bushy. Thorax heavily pollinose, vittæ distinct, about four rows of setulæ on middle stripe. Abdomen subshining, hypopygium moderately small, paramera short, bluntly rounded triangular, not setulose, foramen large. Tarsi apically dark, front femora with six setæ above, middle femora with one anterior bristle at middle and none behind, hind femora with three dorsal and a double full series of ventral bristles and flexor setulæ. Wings lutescent basally, outer costal and apical portions infumated, crossveins bordered with black, posterior crossvein lightly sinuous.

Type: Mica, Washington,* 14 July, 1918. Thirteen paratypes, Pullman and Mount Constitution, Washington,* Avon, Idaho,* Beaver Creek, Montana,* (Hunter).

Tetanocera obtusifibula new species.

Length, 8 to 11 mm. Closely resembling *T. vicina*, the males easily recognizable by the centrally constricted tubular paramera of the hypopygium. Cervical spot dark brown bounded by yellow; interfrontal stripe reaching to or beyond the middle of the luteous sutural band, laterally bounded with brown; orbital spot at antennæ black, merging into golden at the eye; face and cheeks golden sericeous; outer side of second antennal joint one-fourth longer than deep, third joint triangular, with rounded excision above and apically rather pointed; arista very bushy plumose, with stout base. Thorax with complete median pair of rusty brown vittæ and with two interrupted lateral stripes, making six vittæ between the wings. Abdomen uniformly ferruginous yellow, paramera of hypopygium not pollinose, relatively

short and thick, somewhat constricted at the middle and apically obliquely truncate. Only apical joints of tarsi blackened, front femora with about seven bristles above, middle femora with one anterior bristle, hind femora with four or five bristles above and in male with a complete row below, in female with two or three in front below proximal to the row of about ten setæ. Wings with yellowish tinge, the apical half of costal margin slightly infumated, crossveins slightly clouded, posterior crossvein sinuous.

Thirty-seven specimens. Pullman and Mount Constitution, Washington;* Worley, Idaho;* Stanford, California.* June to September. The females are difficult to distinguish from large and vittate specimens of *T. vicina*. Although somewhat variable, the following characters will help: In *obtusifibula* the small spur of the preapical pair on the hind tibiæ is about two-thirds, instead of less than one-half, the length of the larger; the apical row of setæ of the underside of the hind femora contains about ten, instead of about eight, setæ, proximal to which are two or three or even four, instead of one or two, stout bristles, while in the posterior inferior row of the hind femora are three or rarely four relatively weak, instead of four relatively strong, bristles; the middle stripe of the front is usually narrower, typically about one-half, instead of two-thirds, as wide as long and usually the sutural luteous band is somewhat wider.

***Tetanocera papillifera* new species.**

Male—Length, 9–10 mm. Ochraceous; resembling *vicina*, but readily distinct in structure of hypopygium. Front quadrate, dull luteous along the suture, interfrontal and parafrontal stripes shining, the former one-eighth the width of front and interrupted by the transverse luteous band; face greatly receding, silky white, the silvery occipital spot with pale brown center; second and third antennal joints subequal, the second joint expanding from the base and rather strongly setulose, third joint one-half longer than deep, with evenly rounded apex; arista black, with enlarged base, plumose with fine long and rather sparse hairs. Mesonotum marked with six narrow brown vittæ, the central pair longest, but not attaining the neck. A notopleural light brown stripe extending along the pale yellow plure, metapleural callosity light brown, sternopleural setule distinct. Abdomen subshining, setulose, fifth tergite fringed with about twelve long apical bristles, laterally nearly straight and parallel-sided, transversely narrower than the third or fourth tergites; hypopygium finely setulose, the terminal portion bearing a strong mammiform papilla on the right side at the apex, foramen large, circular; double patches of black setulæ of last sternite dense. Legs entirely yellowish, wings nearly hyaline, crossveins infumated; posterior crossvein slightly arched.

Type, Pullman, Washington; paratypes, same locality and Tacoma, Washington; Yellowstone Lake, Wyoming; Missoula, Montana. All the specimens were taken during August.

Tetanocera spirifera new species.

Male—Length 6 mm. Front yellow, orbits silvery, paraorbits scarcely shining, middle stripe depressed, narrow, extending through the luteous fascia, its nearly parallel sides bounded by brown; antennal orbital spot brown, cervical spot brown, enclosed by a silvery mark; face and cheeks sericeous white; antennæ relatively short, the second joint obconic, as long as deep and three-fifths the length of the bluntly triangular, almost quadrate, third joint, arista two-thirds longer than the last joint, its base thick, its plumosity moderately close and long. Mesonotum ochraceous, with narrow light brown acrostichal vittæ and broader lateral stripes; pleuræ pale ochraceous, with superior fulvous band as usual. Abdomen unicolorous ochraceous, hypopygium moderate, with pronounced posterior swelling before the foramen, paramera short, very slender, twisted corkscrew-like. Legs yellow, tarsi dusky, front coxæ with four bristles, front femora with four dorsal bristles, middle femora with one anterior bristle, hind femora with two dorsal and about six short bristles in each flexor row in addition to the apical pectination and proximal moderately sparse setulæ. Wings with yellowish tinge, costal margin, apex and crossveins infumated, sections of fourth vein proportioned 1 : 0.8 : 1, posterior crossvein gently curved, anal vein slightly longer than half the discal cell.

Type and female, Nigger Hills of Powell County, Montana,* July, received from Wm. M. Mann; paratype male, Gardiner, Montana,* 17 August, 1918.

Tetanocera phyllophora new species.

Male—Length, 6.5 mm. Front yellow, somewhat translucent, parafrontal stripes subshining, median stripe scarcely depressed, narrowly triangular, vanishing at the luteous sutural edge; occiput subshining yellow, no cervical dark spot; face and cheeks pale yellow, sericeous; antennæ relatively short, second joint obconic, as deep as long and three-fifths the length of the third joint, the last rounded triangular, one-third longer than deep at base, the lower edge convex, arista delicate, scarcely twice as long as the third joint, loosely plumose. Mesonotum uniformly ferruginous-yellow, not vittate; pleuræ dusted, ochraceous below the pale brownish notopleural portion. Abdomen ochraceous, foramen of hypopygium small, paramera long, curved, pollinose except on the pubescent, shining, explanate, pointed tip. Legs entirely yellow, front femora with five outstanding dorsal bristles, middle femora with one anterior bristle, hind femora with two dorsal bristles, and about five below in addition to abundant flexor setæ along the entire length. Wings with flavescent tinge, veins yellowish toward

base and brownish distally, crossveins strongly and wing-tip weakly infumated, posterior crossvein gently curved, sections of fourth vein proportioned 1 : 0.9 : 1, anal vein not exceeding half the length of the discal cell.

Holotype: Mount Constitution, Orcas Island, Washington,* 7 August, 1909. While there are two normal fronto-orbital bristles on the right side, the anterior is completely lacking on the left. Were a single fronto-orbital a normal occurrence, the shortened antennæ and the narrow tapering interfrontal stripe would be suggestive of *Renocera*. The species is closely related to *T. unicolor* Loew.

Sepedon Latreille.

- Middle femora spinose beneath; wings brown or strongly infumated, third and fourth veins apically converging; length about 8 mm..... 2
- Middle femora not spinose, hind femora relatively short and stout, none of the femora black-tipped; wings grayish, third and fourth veins parallel; frontal spot black; third antennal joint blunt, arista mostly white and half again longer than the third antennal joint; length about 5 mm..... 6
2. Second antennal joint as thick as the bluntly triangular third; thorax, abdomen and legs reddish brown; frontal spot velvety brown; halteres yellowish; hind femora not excessively long..... 3
- Second antennal joint very slender and long, arista largely dark and nearly twice the length of the third antennal joint; abdomen at least metallic blue; all femora tipped with black, hind femora slender and nearly twice as long as abdomen..... 4
3. Third and fourth veins nearly parallel; central depression of front three times as wide as lateral depression. Me. (Hough), Mass.,* R. I., N. Y.,* Queb., Ont.,* N. J., Pa., Md., Ill.,* Ida.,* Man..... **fuscipennis** Loew
- Third and fourth veins slightly convergent; central depression of front less than twice as wide as lateral depression. Wyo.,* Ut.,* Ida.,* Wash.,* Cal. (Cresson, Ent. News, XXV, 457 (1914))... **pacifica** Cresson
4. Front broadly excavated, with weak ridges; posterior crossvein bowed outwards. D. C., Md., Va. (Cresson, 84)..... **tenuicornis** Cresson
- Front narrowly excavated, with prominent ridges; posterior crossvein straight..... 5
5. Hind femora with blackish annulus beyond the middle; velvety frontal spot concolorous with shining portion of front; thorax reddish; third antennal joint acute; halteres brownish. Jam., Porto Rico, Cuba,* Mex., Tex. (*nigriventris* Wulp)..... **macropus** Walker
- Hind femora not annulate but black on apical third; frontal spot black; thorax with two pronounced blue vittæ; third antennal joint with rounded apex; knob of halteres black. Haiti.*..... **cæruleus**, n. sp.
6. Underside of ♂ hind femora deeply excised and bearing 2 prongs; color generally yellowish brown; apical segments of ♀ abdomen compressed, carinate above. Mass.,* Ct., N. Y., Ont.,* Md., D. C.,* N. J., Ga., Ohio, Ill.,* Mich., S. D., Col., Tex.,* Mont.,* Wyom.,* Wash.,* Cal. **armipes** Loew
- Femora of both sexes simple; color generally piceous; apical segments of ♀ arched above. Mass.,* N. H., N. Y.,* N. J., Md., D. C., Va., Ga., Mid. States, Neb., Wyo.,* Mont.,* Ida.,* Wash.,* Cal. ... **pusillus** Loew

Sepedon cæruleus new species.

Male—Length, 8 mm. Head yellow, a shield-shaped cervical spot and an elongate infraocular mark white-pruinose, black orbital spots at middle of front and at antennæ, upper frontal orbits dusky; antennæ black, first joint quadrate, second joint attenuated, two-thirds longer than the third, which is twice as long as deep and apically rounded, arista nearly twice the length of the third antennal joint, white on apical half and basally brown, its second joint four times as long as wide; palpi yellow, the extreme tip dusky. Mesonotum metallic blue between the complete median black vitta and the sides, scutellum medially black from a continuation of the notal vitta and laterally blue; upper pleuræ with reddish tinge, lower bluish superimposed with white pollen. Abdomen entirely dark blue with bronze tinge. Legs, including coxæ, mostly reddish yellow, femora tipped with black, the hind pair more broadly so, hind tibiæ dark, except a subapical band, tarsi dusky, front femora not spinose. Halteres with blackened knob. Wings strongly infumated, veins black, first posterior cell as wide at middle as the end of the discal cell, anal vein incomplete, sections of fourth vein equal, posterior crossvein arched, but much less oblique than in *S. fuscipennis*.

Holotype: Haiti,* received from Dr. Hough.